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POLYHYDROXYALKANOATES - PROMISING BIODEGRADABLE POLYMERS

Summary

This paper discusses properties of polyhydroxyalkanoates (PHA), biopolymers with a huge potential for practical applications. PHA have a number of advantages such as biocompatibility (no toxicity for organism), biodegradability and thermoplastic properties similar to those of synthetic plastics. Unfortunately, despite these advantages PHA are not widely used owing to the high costs of their preparation and purification. Therefore, in order to reduce these costs efforts are being undertaken to replace traditional carbon sources for cultivation of microorganisms by cheaper waste materials. Another way to reduce the cost of PHA production is the use of genetically modified microorganisms. An alternative approach may be also a search for new methods for extraction of these biopolymer from the cells including combination of chemical and mechanical methods of purification. PHA are very often used in medicine, because of their properties and biodegradability. In this area they substitute plastics. Unfortunately, costs of production from PHA polymeric objects for everyday use are still too high, so synthetic polymers remain predominantly in use.

Key words: biopolymers, microorganisms, plastics, polyhydroxyalkanoates